

ABSTRACT

A method of designing a primary geometry, such as for a forming die, to be used in a powder pressing application by using a combination of axisymmetric geometric shapes, transition radii, and transition spaces to simulate the geometry where the shapes can be selected from a predetermined list or menu of axisymmetric shapes and then developing a finite element mesh to represent the geometry. This mesh, along with material properties of the component to be designed and powder, is input to a standard deformation finite element code to evaluate the deformation characteristics of the component being designed. The user can develop the geometry interactively with a computer interface in minutes and execute a complete analysis of the deformation characteristics of the simulated component geometry.